

data units and each data unit including information for both indicating a coding mode and identifying the audio signal represented by the data unit, and at least more than one audio channel, a block of the data units being sequentially interleaved between data units of video signal, each audio signal being represented by one of the data units in the block, comprising:

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a demodulator for demodulating the digital signal to restore an original signal;

2
a signal processor for receiving the plurality of audio signals, extracting the indicating information, separating the data units corresponding to at least one of the plurality of audio signals based on the extracted indicating information; and

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a controller, coupled to the signal processor, controlling the signal processor to separate the data units corresponding to one of the audio signals designated by user input.

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28. (Twice Amended) A method for reproducing a digital signal recorded on a medium, said digital signal including a video signal, a plurality of audio signals encoded into audio channels wherein each audio signal is composed of at least data units of audio information, and each data unit including indicating information for indicating a coding mode and identifying the audio signal represented by the data unit, and at least more than one audio

channel, a block of the data units being sequentially interleaved between data units of video signal, each audio signal being represented by one of the data units in the block, comprising the steps of:

demodulating the digital signal to restore an original signal;

receiving the video signal and the plurality of audio signals;

extracting the indicating information;

separating the data units corresponding to at least one of the plurality of audio signals based on the extracted indicating information; and

controlling the separating step to separate data units corresponding to one of the plurality of audio signals in response to user input designating one of the plurality of audio signals.

31. (Twice Amended) A device for processing a digital signal, comprising:
an audio signal processor receiving indicating information and first units of a plurality of digital audio data interleaved at a predetermined interval with second units of digital video data, each unit of the digital audio data including more than one audio channel, and the indicating information indicating both a coding mode and a presence of the audio channels in the digital audio data, the audio signal processor extracting the indicating information, and separating one of the audio data using the indicating information; and

a control circuit controlling the audio signal processor to separate one of

3 the audio data based on user input designating one of the audio data.

32. (Amended) The device of claim 31, wherein the digital audio data includes audio data of a first type and audio data of a second type, contents of the audio data of the first type being different from contents of the audio data of the second type.

33. (Amended) The device of claim 32, wherein the audio data of the first type includes accompaniment sound.

34. (Amended) The device of claim 32, wherein the audio data of the first type includes accompaniment sound and vocals, which are associated with the digital video data.

35. (Twice Amended) The device of claim 31, further comprising:
a timing signal generator generating a timing signal; and wherein
the audio signal processor compares the timing signal to timing
information in the digital audio data, and outputs the separated one of the
audio data based on the comparison.

36. (Amended) The device of claim 31, wherein the audio signal processor

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MPEG decodes the audio data.

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38. (Twice Amended) A method for processing a digital signal,
comprising:

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receiving indicating information and first units of a plurality of digital audio data interleaved at a predetermined interval with second units of digital video data, each unit of the digital audio data including more than one audio channel, and the indicating information indicating both a coding mode and a presence of the audio channels in the digital audio data;

extracting the indicating information;

separating one of the audio data using the indicating information and user input designating one of the audio data.

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39. (Amended) The method of claim 38, wherein the digital audio data includes audio data of a first type and audio data of a second type, contents of the audio data of the first type being different from contents of the audio data of the second type.

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40. (Amended) The method of claim 39, wherein the audio data of the first type includes accompaniment sound.

41. (Amended) The method of claim 39, wherein the audio data of the first type includes accompaniment sound and vocals, which are associated with the digital video data.

42. (Twice Amended) The method of claim 38, further comprising:
generating a timing signal;
comparing the timing signal to timing information in the digital audio data; and
outputting the separated one of the audio data based on the comparison.

43. (Twice Amended) The device of claim 38, wherein the separating step includes MPEG decoding the audio data.